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United States Patent [19]

Springer et al.

[11] Patent Number:

5,831,036

Date of Patent: Nov. 3, 1998

[54] SOLUBLE FRAGMENTS OF HUMAN INTERCELLULAR ADHESION MOLECULE-1

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[21] Appl. No.: 140,554

[22] Filed: Oct. 25, 1993 Address by the contract of the

Related U.S. Application Data

[60] Division of Ser. No. 515,478, Apr. 27, 1990, abandoned, which is a continuation-in-part of Ser. No. 45,963, May 4, 1987, abandoned, Ser. No. 115,798, Nov. 2, 1997, abandoned, Ser. No. 115,798, Nov. 2, 1997, abandoned doned, Ser. No. 155,943, Feb. 16, 1988, abandoned, Ser. No. 250,446, Sep. doned, Ser. No. 153,943, Feb. 16, 1983, abandoned, Ser. No. 250,446, Sep. 188, 1988, abandoned, Ser. No. 254,446, Sep. 28, 1988, abandoned, Ser. No. 373,882, Jun. 30, 1989, abandoned, and Ser. No. 456,647, Dec. 22, 1989, abandoned.

[52] · U.S. Cl. 530/395; 424/185.1; 435/69.3;

530/300; 530/350

[58] Field of Search 530/350, 395, 530/300, 868, 403; 424/88, 184.1, 185.1, 198.1, 199.1; 514/2, 8; 435/69.1, 69.3,

69.6

[56]

References Cited

FOREIGN PATENT DOCUMENTS

0319815B1 6/1989 European Pat. Off. .

OTHER PUBLICATIONS

Alexander, E.L. et al., Cutaneous Manifestations of Sjörgen's Syndrome, in Jordon, R.E., ed., Immunologic Diseases of the Skin, Appleton & Lange, Norwalk, CI, San Mateo, ,CA, pp. 401-408 (1991).

Anderson, D.C. et al., Leukocyte LFA-1, OKM1, p150,95 deficiency syndrome: functional and biosynthetic studies of three kindreds, Fed. Proceedings 44(10):2671-2677 (Jul.

¿Anderson, D.C. et al., Leukocyte Adhesion Deficiency: An Inherited Defect in the Mac-1, LFA-1, and p150,95 Glycoproteins, Ann. Rev. Med. 38:175-194 (1987).

Bashir, R. et al., Expression of LFA-1/ICAM-1 in CNS lymphomas: possible mechanism for lymphoma homing into the brain, J. Neuro-Oncol. 12:103-110 (1992).

Boyd, A.M. et al., Intercellular adhesion molecule 1, (ICAM-1) has a central role in cell-cell contact-mediated limmune io mechanisms, Proc. Natl. Acad. Sci. USA 85:3095-3099 (May 1988).

Byers, V.S. et al., Use of an Anti-Pan T-Lymphocyte Ricin "And Chain Immunotoxin in Steroid-Resistant Acute Graft-Versus-Host Diesease, Blood 75(7):1426-1432 (Apr. 1, 1990).

Colonio, RJ, et al., Isolation of a Monoclonal Antibody That Blocks Attachment of the Major Group of Human Rhinoviruses, J. Virol. 57(1):7-12 (Jan. 1986).

Cooper, K.D. et al., Immunologic Features of Psoriasis, in Jordon, R.E., ed., Immunologic Diseases of the Skin, Appleton & Lange, Norwalk, CT, San Mateo, CA, pp. 611-619 (1991).

Cosimi, A.B. et al., In Vivo Effects Of Monoclonal Antibody To ICAM-1 (CD54) In Nonhuman Primates With Renal Allografts, J. Immunol. 144(12):4604-4612 (Jun. 15, 1990). Cunningham, C. et al., Antibody engineering —how to be human, TIBTECH 10 (Apr. 1992).

Dantal, J. et al., Use of monoclonal antibodies in human transplantation, Curr. Opin. Immunol. 3:740-747 (1991).

Davignon, D. et al., Lymphocyte function-associated antigen 1 (LFA-1): A surface antigen distinct from Lyt-2,3 that participates in T lymphocyte-mediated killing, Proc. Natl. Acad. Sci. USA 78:4535-4539 (Jul.: 1981).

Dustin, M.L. et al., Adhesion Of T Lymphoblasts To Epidermal Keratinocytes Is Regulated By Interferon & And Is Mediated By Intercellular Adhesion Molecule 1 (ICAM-1), J. Exp. Med. 167:1323-1340 (Apr. 1988)

Dustin, M.L. et al., Induction By IL 1 And Interferon-t:Tissue Distribution, Biochemistry, And Function Of A Natural Adherence Molecule (ICAM-1), J. Immunol. 137(1):245-254 (Jul. 1, 1986).

Dustin, M.L. et al., Lymphocyte Function-associated Antigen-1 (LFA-1) Interaction with Intercellular Adhesion Molecule-1 (ICAM-1) is One of At Least Three Mechanisms for Lymphocyte Adhesion to Cultured Endothelial Cells, J. Cell Biol. 107:321-331 (Jul. 1988).

Dustin, M.L. et al. Purified Lymphocyte Function-Associated Antigen 3 Binds To CD2 And Mediates T Lymphocyte Adhesion, J. Exp. Med. 165:677-692 (Mar. 1987).

Dustin, M.L. et al., Supergene families meet in the immune system, Immunol. Tody 9(7&8):213-215 (1988)...

Dustin, M.L. et al., T-cell receptor cross-linking transiently stimulates adhesiveness through LFA-1, Nature 341:619-624 (Oct. 19, 1989).

Fischer, A. et al., Role Of The LFA-1 Molecule In Cellular Interactions Required For Antibody Production In Humans, J. Immunol. 136(9):3198-3203 (May 1,1986). 41104 1104 Flavin, T. et al., Monoclonal Antibodies Against Intercellular Adhesion Molecule 1 Prolong Cardiac Allograft Survival in Cynomoligus Monkeys, Transplant: Proc. 23(1):533-534 ं रहता के **क्रिकामको प्रसिद्धी** लिए हैं है । राजकार्य, **A.M. et अ.. EBA-**4, 12 e - 10 जि (Feb. 1991).

(List continued on next page.) 555/17.57

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ABSTRACT

The present invention relates to intercellular adhesion molecules (ICAM-1) which are involved in the process through which lymphocytes recognize and migrate to sites of inflammation as well as attach to cellular substrates during inflammation. The invention is directed toward such molecules, screening assays for identifying such molecules and antibodies capable of binding such molecules. The invention also includes uses for adhesion molecules and for the antibodies that are capable of binding them. Market II et al., Recaposure in a III du 💎 and Albara

4 Claims, 25 Drawing Sheets